

Trident Renewal: future vulnerabilities must be taken seriously

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About the research

In 2016, the British government will make a decision whether or not to proceed with the manufacture of a Trident submarine replacement. A decision to renew Trident would effectively commit the UK to nuclear weapons status for the foreseeable future.

The debate on Trident renewal has been prominent and heated. It has tended to take place along well-established lines of argument: the continuing relevance (or not) of nuclear deterrence; the international prestige and status (or otherwise) that comes from possessing nuclear weapons; the cost of renewal and so on. In recent months, a novel exception has concerned the potential vulnerability of a Trident successor to new and emergent forms of anti-submarine warfare (ASW). Such concerns have been treated with scepticism by key figures, including two respected former Labour defence secretaries, who, in February 2016, dismissed them as 'completely spurious.'¹

We believe such a position to be premature. This is particularly so given the current trends in military technological development, and the likely lifespan of a Trident successor system to perhaps 2060 or beyond. The implications of these developments are potentially transformative and require a more considered and systematic evaluation before a successor system is approved.

This briefing explores the challenges facing British defence in the aftermath of the 2015 Strategic Defence and Security Review.

Policy implications

- Timescales are important. Government should consider whether current assumptions of invulnerability can be realistically sustained over a period to 2060 and, if not, how this affects the assumptions and practice of UK nuclear deterrence.
- Government should consider whether sufficient attention has been given to likely future developments in undersea warfare, and the extent to which decisions on the successor system are predicated on an unquestioned assumption of submarine invulnerability. Evidence of this consideration should be made explicit in the Trident renewal debate.
- Government should consider whether devoting substantial defence resource to a small number of high-value submarine platforms is a sufficient, and sufficiently resilient, strategy for a future operating environment likely to be characterized by rapid technological advancement and the emergence of plausible ASW countermeasures.
- Government should consider a more fundamental review of the potential impact of emergent technologies on the undersea warfare environment. Any such review should address the resilience of existing strategic and operational concepts, the viability of potential technological responses, and, ultimately, the sustainability of very long term, inflexible, procurement cycles for core strategic capabilities.

Key findings

The logic of a submarine-based nuclear deterrent rests in large part on its un-detectability – and therefore its invulnerability at sea. This allows nuclear weapons to be concentrated in a very small number of submarine platforms. Current ASW capabilities do not yet seriously challenge these assumptions.

However, technological advances over the past decade have been rapid. These include developments in satellite and undersea surveillance, cyber and seabed warfare, drone capabilities, and ‘force multiplying’ technologies such as miniaturisation, networking and big data analysis. These technologies are of increasingly low cost and wide availability.²

Similar technological developments are already affecting other areas of strategic affairs. Generally speaking, there has been a move away from small numbers of high value platforms (e.g. next generation fighter aircraft), towards more distributed, expendable and resilient alternatives.³

There is little reason to believe that the undersea environment will remain immune to these trends over the timescale that would define a Trident successor system. Indeed, the current technological direction of travel strongly suggests it will not. Such developments are already taken seriously by the US Navy and others, including potential adversaries.⁴



Further Information:

References:

- 1 John Hutton and George Robertson, ‘Labour’s Trident Debate Needs to be Based on Facts’, *Guardian*, 22 February 2016, <http://bit.ly/21M0IOr>
- 2 Bryan Clark, *The Emerging Era in Undersea Warfare* (Washington DC: Centre for Strategic and Budgetary Assessments, 2016), <http://bit.ly/15bznOQ>
- 3 UK MoD, *Future Operating Environment 2035* (Shrivenham: DCDC, 2015), <http://bit.ly/1SrHPkG>
- 4 Chief of Naval Operations, *Report to Congress: Autonomous Undersea Vehicle Requirement for 2025*, February 2016, <http://bit.ly/23GOHQr>

This work derives from a collaboration between the Global Insecurities Centre (GIC) at the University of Bristol, and colleagues from the University of York and British Pugwash.

Further information, and previous PolicyBristol briefings on British defence issues, can be found on the GIC website: www.bristol.ac.uk/global-insecurities.

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